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**Listing of Claims:**

This listing of claims replaces all prior versions and listings of claims in the application.

1. (Currently Amended) An n-type semiconductor diamond, characterized by a ~~crystalline~~  
~~perfectness whereby~~ making method comprised of:

~~it has impurity atoms constituted by sulfur atoms forming a single donor level of 0.38 eV,~~

~~it has a carrier mobility's temperature dependency which at a temperature (T) range in~~  
~~excess of the room temperature is  $T^{3/2}$  dependent, and~~

~~it has a diamond peak in its Raman spectrum, whose half width is  $2.6 \text{ cm}^{-1}$ ;~~

~~a crystalline perfectness whereby:~~

~~light emission by excitons is observable; and~~

~~a crystalline perfectness whereby:~~

~~a distinct Kikuchi pattern in its reflection electron diffraction analysis is observable~~

~~mechanically polishing a (100) diamond surface to make it in an inclined diamond~~  
~~substrate;~~

~~subjecting a surface of said inclined diamond substrate to a hydrogen plasma to make~~  
~~said substrate surface to consist of steps each in the order of an atomic layer; and~~

~~subjecting said substrate surface consisted of steps each in the order of an atomic layer to~~  
~~an exited raw material gas made of a volatile hydrocarbon compound, a sulfur compound and a~~  
~~hydrogen gas by a microwave plasma to cause n-type semiconductor diamond to grow~~  
~~epitaxially on said surface consisted of steps each in the order of an atomic layer,~~

~~wherein said n-type semiconductor has a single donor level of 0.38 eV, which is~~  
sufficient to allow operation of said n-type semiconductor diamond as p-n junction device.